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<110> Haru, Yoshiki
Mittelsten Scheid, Ortrun
Amedeo, Paolo
Paszkowski, Jerzy

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aag atg gtt ctt tat gca tcc ccc ata gtt gaa act agg gat gac agc  1311
Lys Met Val Leu Tyr Ala Ser Pro Ile Val Glu Thr Arg Asp Asp Ser
    320                 325                 330

gtt ata tgt tca cca tct aca aat tta gaa acc caa aag ctt ctt gtc  1359
Val Ile Cys Ser Pro Ser Thr Asn Leu Glu Thr Gln Lys Leu Leu Val
335                 340                 345                 350

agt aaa act ggc tta gaa acc gac ata gtt ttg cct ttg aaa aga aaa  1407
Ser Lys Thr Gly Leu Glu Thr Asp Ile Val Leu Pro Leu Lys Arg Lys
                355                 360                 365

aga gac act gca gaa att gag ctg gat gca tgt gct aca gtt gca aat  1455
Arg Asp Thr Ala Glu Ile Glu Leu Asp Ala Cys Ala Thr Val Ala Asn
            370                 375                 380
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gga gat gat cac gtt atg agt tct gat ggg gtc att cca tct cca tct   1503
Gly Asp Asp His Val Met Ser Ser Asp Gly Val Ile Pro Ser Pro Ser
        385                 390                 395

ggg tgc aaa aat gat aat cga cct gaa atg tgc aac acg tgt aaa aaa   1551
Gly Cys Lys Asn Asp Asn Arg Pro Glu Met Cys Asn Thr Cys Lys Lys
    400                 405                 410

cgg caa aag gtc aac ggt gat tgt caa aat agg agt gtt tgc tcc tgc   1599
Arg Gln Lys Val Asn Gly Asp Cys Gln Asn Arg Ser Val Cys Ser Cys
415                 420                 425                 430

att gtc cag cca gtt gaa gaa tct gat aac gtg aca cag gat atg aaa   1647
Ile Val Gln Pro Val Glu Glu Ser Asp Asn Val Thr Gln Asp Met Lys
                435                 440                 445

gaa act gga cca gtt acg agc aga gaa tat gag gag aac ggg caa ata   1695
Glu Thr Gly Pro Val Thr Ser Arg Glu Tyr Glu Glu Asn Gly Gln Ile
            450                 455                 460

caa cat ggt aaa tca agt gat ccc aaa ttc tat tct tcg gtg tac cca   1743
Gln His Gly Lys Ser Ser Asp Pro Lys Phe Tyr Ser Ser Val Tyr Pro
        465                 470                 475

gag tat tgg gtt cct gtg cag cta tca gat gta cag ctg gag caa tac   1791
Glu Tyr Trp Val Pro Val Gln Leu Ser Asp Val Gln Leu Glu Gln Tyr
    480                 485                 490

tgt cag act ctc ttc tcc aaa tcc tta tct ctt tct tca ctt tcg aag   1839
Cys Gln Thr Leu Phe Ser Lys Ser Leu Ser Leu Ser Ser Leu Ser Lys
495                 500                 505                 510

att gat ctt gga gct cta gaa gaa act ctc aat tct gta aga aaa acc   1887
Ile Asp Leu Gly Ala Leu Glu Glu Thr Leu Asn Ser Val Arg Lys Thr
                515                 520                 525

tgt gac cat cca tac gtt atg gat gca tct ttg aaa caa ctg ctc acc   1935
Cys Asp His Pro Tyr Val Met Asp Ala Ser Leu Lys Gln Leu Leu Thr
            530                 535                 540

aag aat ctg gag ttg cat gaa atc ctg gat gta gaa att aaa gcg agc   1983
Lys Asn Leu Glu Leu His Glu Ile Leu Asp Val Glu Ile Lys Ala Ser
        545                 550                 555

ggg aaa ctt cac ctc ctt gat aaa atg ctt act cat ata aaa aag aat   2031
Gly Lys Leu His Leu Leu Asp Lys Met Leu Thr His Ile Lys Lys Asn
    560                 565                 570

ggt tta aaa gca gtt gtc ttc tac cag gca aca caa acc cct gaa ggg   2079
Gly Leu Lys Ala Val Val Phe Tyr Gln Ala Thr Gln Thr Pro Glu Gly
575                 580                 585                 590

ctt ctg ctt ggt aat att ctc gaa gat ttt gtg ggt caa aga ttt ggt   2127
Leu Leu Leu Gly Asn Ile Leu Glu Asp Phe Val Gly Gln Arg Phe Gly
                595                 600                 605

cca aaa tct tat gag cat ggg ata tat tcc tca aag aag aac tcc gct   2175
Pro Lys Ser Tyr Glu His Gly Ile Tyr Ser Ser Lys Lys Asn Ser Ala
            610                 615                 620

ata aac aat ttc aac aag gag agt caa tgc tgt gtt ctg ctg ttg gaa   2223
Ile Asn Asn Phe Asn Lys Glu Ser Gln Cys Cys Val Leu Leu Leu Glu
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625 630 635

aca cgt gcc tgc agt caa acc att aaa ctc ttg cga gct gat gcg ttt 2271
Thr Arg Ala Cys Ser Gln Thr Ile Lys Leu Leu Arg Ala Asp Ala Phe
640 645 650

att ctt ttt gga agc agc ttg aat cca tcg cat gat gtt aag cac gta 2319
Ile Leu Phe Gly Ser Ser Leu Asn Pro Ser His Asp Val Lys His Val
655 660 665 670

gag aag ata aaa atc gag tca tgt tct gaa aga act aag ata ttc cga 2367
Glu Lys Ile Lys Ile Glu Ser Cys Ser Glu Arg Thr Lys Ile Phe Arg
675 680 685

ttg tac tca gta tgt aca gtt gaa gaa aaa gcc ctg att ctg gct agg 2415
Leu Tyr Ser Val Cys Thr Val Glu Glu Lys Ala Leu Ile Leu Ala Arg
690 695 700

caa aat atg cgg caa aat aaa gct gta gag aac cta aac cgc tct ctc 2463
Gln Asn Met Arg Gln Asn Lys Ala Val Glu Asn Leu Asn Arg Ser Leu
705 710 715

acg cac gca ctg ctc atg tgg ggg gcg tca tac tta ttt gat aaa ctg 2511
Thr His Ala Leu Leu Met Trp Gly Ala Ser Tyr Leu Phe Asp Lys Leu
720 725 730

gat cat ttt cac agc agt gaa act cca gat tca gga gtt tca ttt gaa 2559
Asp His Phe His Ser Ser Glu Thr Pro Asp Ser Gly Val Ser Phe Glu
735 740 745 750

caa tct att atg gac ggc gtg att cat gaa ttc tcg tcc ata ctt tct 2607
Gln Ser Ile Met Asp Gly Val Ile His Glu Phe Ser Ser Ile Leu Ser
755 760 765

tcc aaa ggt gga gaa gaa aat gaa gtc aag ctg tgt cta ctt ttg gag 2655
Ser Lys Gly Gly Glu Glu Asn Glu Val Lys Leu Cys Leu Leu Leu Glu
770 775 780

gcc aag cat gct cag gga act tac agc agt gat tct act cta ttt ggt 2703
Ala Lys His Ala Gln Gly Thr Tyr Ser Ser Asp Ser Thr Leu Phe Gly
785 790 795

gaa gac cat att aag ttg tca gat gaa gag agt cca aat ata ttt tgg 2751
Glu Asp His Ile Lys Leu Ser Asp Glu Glu Ser Pro Asn Ile Phe Trp
800 805 810

tca aag ctg ttg ggg gga aaa aat cct atg tgg aaa tac cct tca gat 2799
Ser Lys Leu Leu Gly Gly Lys Asn Pro Met Trp Lys Tyr Pro Ser Asp
815 820 825 830

act ccc caa agg aat cga aaa cga gtt cag tat ttt gag ggt tct gaa 2847
Thr Pro Gln Arg Asn Arg Lys Arg Val Gln Tyr Phe Glu Gly Ser Glu
835 840 845

gcg agt ccc aaa act ggc gat ggt gga aat gca aag aag cga aag aag 2895
Ala Ser Pro Lys Thr Gly Asp Gly Gly Asn Ala Lys Lys Arg Lys Lys
850 855 860

gct tct gat gat gtc act gat ccc cgg gtc act gat ccg cca gta gat 2943
Ala Ser Asp Asp Val Thr Asp Pro Arg Val Thr Asp Pro Pro Val Asp
865 870 875

gat gat gaa aga aag gcc tct ggg aag gat cac atg ggg gct ttg gag 2991

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Asp Asp Glu Arg Lys Ala Ser Gly Lys Asp His Met Gly Ala Leu Glu
    880                 885                 890

tca cca aaa gtc ata aca ctc cag tca tca tgt aaa tct tct ggt aca   3039
Ser Pro Lys Val Ile Thr Leu Gln Ser Ser Cys Lys Ser Ser Gly Thr
895                 900                 905                 910

gat ggt aca ttg gat gga aat gat gct ttt ggc ttg tat tct atg ggc   3087
Asp Gly Thr Leu Asp Gly Asn Asp Ala Phe Gly Leu Tyr Ser Met Gly
                915                 920                 925

agc cat atc tct gga atc cca gag gat atg tta gct agt caa gat tgg   3135
Ser His Ile Ser Gly Ile Pro Glu Asp Met Leu Ala Ser Gln Asp Trp
            930                 935                 940

ggg aaa ata ccg gat gaa tca cag agg agg ctc cac act gtt tta aag   3183
Gly Lys Ile Pro Asp Glu Ser Gln Arg Arg Leu His Thr Val Leu Lys
        945                 950                 955

ccg aag atg gca aaa ctt tgc caa gtt ttg cat ctt tca gat gct tgc   3231
Pro Lys Met Ala Lys Leu Cys Gln Val Leu His Leu Ser Asp Ala Cys
    960                 965                 970

aca agc atg gtc gga aat ttt ctc gaa tat gtt att gaa aat cac cga   3279
Thr Ser Met Val Gly Asn Phe Leu Glu Tyr Val Ile Glu Asn His Arg
975                 980                 985                 990

atc tac gaa gag cca gcc act act ttt cag gca ttc cag ata gcc ctg   3327
Ile Tyr Glu Glu Pro Ala Thr Thr Phe Gln Ala Phe Gln Ile Ala Leu
                995                1000                1005

agt tgg att gca gcc ttg ttg gta aag caa att ctt agc cac aaa gaa   3375
Ser Trp Ile Ala Ala Leu Leu Val Lys Gln Ile Leu Ser His Lys Glu
            1010                1015                1020

tct ctg gtc cgt gca aat tct gaa tta gct ttc aaa tgc tct aga gta   3423
Ser Leu Val Arg Ala Asn Ser Glu Leu Ala Phe Lys Cys Ser Arg Val
        1025                1030                1035

gag gtg gat tat att tat tcg ata ttg tcc tgc atg aag agt ctg ttc   3471
Glu Val Asp Tyr Ile Tyr Ser Ile Leu Ser Cys Met Lys Ser Leu Phe
    1040                1045                1050

ctg gag cat aca caa ggt ttg cag ttc gat tgc ttt ggt act aat tct   3519
Leu Glu His Thr Gln Gly Leu Gln Phe Asp Cys Phe Gly Thr Asn Ser
1055                1060                1065                1070

aaa cag tca gtg gtt agc aca aaa cta gta aat gaa agt ctc tca ggg   3567
Lys Gln Ser Val Val Ser Thr Lys Leu Val Asn Glu Ser Leu Ser Gly
                1075                1080                1085

gct aca gtg cgt gac gaa aag att aat acg aag tcg atg cga aat agc   3615
Ala Thr Val Arg Asp Glu Lys Ile Asn Thr Lys Ser Met Arg Asn Ser
            1090                1095                1100

tca gag gat gaa gag tgc atg act gag aag aga tgt agc cat tat agc   3663
Ser Glu Asp Glu Glu Cys Met Thr Glu Lys Arg Cys Ser His Tyr Ser
        1105                1110                1115

aca gca aca aga gat atc gaa aag act att agt ggc ata aaa aag aaa   3711
Thr Ala Thr Arg Asp Ile Glu Lys Thr Ile Ser Gly Ile Lys Lys Lys
    1120                1125                1130
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tac aag aag caa gtg caa aag ctt gta caa gag cat gag gaa aag aaa   3759
Tyr Lys Lys Gln Val Gln Lys Leu Val Gln Glu His Glu Glu Lys Lys
1135                1140                1145                1150

atg gag ctg tta aat atg tat gca gac aag aag cag aaa ctt gaa act   3807
Met Glu Leu Leu Asn Met Tyr Ala Asp Lys Lys Gln Lys Leu Glu Thr
                1155                1160                1165

agt aaa agt gtg gaa gca gca gta att cgt att acc tgt tca cgg acc   3855
Ser Lys Ser Val Glu Ala Ala Val Ile Arg Ile Thr Cys Ser Arg Thr
            1170                1175                1180

agt act caa gtg ggt gat ctc aaa ctg ctg gat cat aat tat gaa aga   3903
Ser Thr Gln Val Gly Asp Leu Lys Leu Leu Asp His Asn Tyr Glu Arg
        1185                1190                1195

aag ttt gat gaa atc aaa agt gag aaa aat gaa tgc ctc aaa agt ctg   3951
Lys Phe Asp Glu Ile Lys Ser Glu Lys Asn Glu Cys Leu Lys Ser Leu
    1200                1205                1210

gag caa atg cac gag gtt gca aag aag aag ttg gct gag gat gaa gcc   3999
Glu Gln Met His Glu Val Ala Lys Lys Lys Leu Ala Glu Asp Glu Ala
1215                1220                1225                1230

tgt tgg att aat cgg ata aag agc tgg gca gct aaa tta aaa gtt tgt   4047
Cys Trp Ile Asn Arg Ile Lys Ser Trp Ala Ala Lys Leu Lys Val Cys
                1235                1240                1245

gtt ccc att caa agt ggc aat aac aag cat ttt agt ggt tca tca aac   4095
Val Pro Ile Gln Ser Gly Asn Asn Lys His Phe Ser Gly Ser Ser Asn
            1250                1255                1260

att tcc caa aat gct cct gat gta caa att tgc aat aat gct aac gtt   4143
Ile Ser Gln Asn Ala Pro Asp Val Gln Ile Cys Asn Asn Ala Asn Val
        1265                1270                1275

gaa gct act tac gct gat acg aat tgc atg gct tcc aag gtt aat caa   4191
Glu Ala Thr Tyr Ala Asp Thr Asn Cys Met Ala Ser Lys Val Asn Gln
    1280                1285                1290

gtg cca gaa gca gaa aac aca tta gga acc atg tcg ggt ggc agc act   4239
Val Pro Glu Ala Glu Asn Thr Leu Gly Thr Met Ser Gly Gly Ser Thr
1295                1300                1305                1310

caa caa gtt cat gaa atg gtg gat gta aga aat gac gag aca atg gat   4287
Gln Gln Val His Glu Met Val Asp Val Arg Asn Asp Glu Thr Met Asp
                1315                1320                1325

gtc tca gct ttg tct cgt gaa cag ctt aca aag agc cag tcc aat gag   4335
Val Ser Ala Leu Ser Arg Glu Gln Leu Thr Lys Ser Gln Ser Asn Glu
            1330                1335                1340

cac gct tct atc act gtg cct gag att ttg att cct gct gac tgt caa   4383
His Ala Ser Ile Thr Val Pro Glu Ile Leu Ile Pro Ala Asp Cys Gln
        1345                1350                1355

gag gaa ttt gcg gcc ttg aac gtg cat ttg tca gaa gac cag aat tgt   4431
Glu Glu Phe Ala Ala Leu Asn Val His Leu Ser Glu Asp Gln Asn Cys
    1360                1365                1370

gac aga ata aca tct gcg gca tca gat gaa gat gtt tca tca agg gtg   4479
Asp Arg Ile Thr Ser Ala Ala Ser Asp Glu Asp Val Ser Ser Arg Val
1375                1380                1385                1390
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cca gag gta tcc cag tca ctc gaa aat ctt tct gcc tcc ccc gag ttt   4527
Pro Glu Val Ser Gln Ser Leu Glu Asn Leu Ser Ala Ser Pro Glu Phe
               1395                1400                1405

tct cta aat aga gag gag gct ttg gtt aca aca gaa aat aga aga aca   4575
Ser Leu Asn Arg Glu Glu Ala Leu Val Thr Thr Glu Asn Arg Arg Thr
          1410                1415                1420

agt cat gtg ggt ttt gat act gat aac att ttg gac cag cag aat aga   4623
Ser His Val Gly Phe Asp Thr Asp Asn Ile Leu Asp Gln Gln Asn Arg
       1425                1430                1435

gaa gat tgt tct ctt gac caa gag att cct gac gag tta gcg atg cct   4671
Glu Asp Cys Ser Leu Asp Gln Glu Ile Pro Asp Glu Leu Ala Met Pro
   1440                1445                1450

gtg caa cat ctt gcg tct gtg gta gag act agg ggt gct gct gaa tct   4719
Val Gln His Leu Ala Ser Val Val Glu Thr Arg Gly Ala Ala Glu Ser
1455                1460                1465                1470

gat cag tat ggt caa gat ata tgt cct atg cct tct tca ctg gct gga   4767
Asp Gln Tyr Gly Gln Asp Ile Cys Pro Met Pro Ser Ser Leu Ala Gly
               1475                1480                1485

aag caa cct gac cca gca gca aac act gag agc gaa aat ctt gaa gaa   4815
Lys Gln Pro Asp Pro Ala Ala Asn Thr Glu Ser Glu Asn Leu Glu Glu
          1490                1495                1500

gca att gag cct cag tct gct ggt tca gaa aca gta gag act act gat   4863
Ala Ile Glu Pro Gln Ser Ala Gly Ser Glu Thr Val Glu Thr Thr Asp
       1505                1510                1515

ttt gct gca tca cat cag ggt gat caa gtt aca tgt cct ttg cta tct   4911
Phe Ala Ala Ser His Gln Gly Asp Gln Val Thr Cys Pro Leu Leu Ser
   1520                1525                1530

tca ccg act gga aat cag cct gcg cca gaa gca aat att gaa ggc caa   4959
Ser Pro Thr Gly Asn Gln Pro Ala Pro Glu Ala Asn Ile Glu Gly Gln
1535                1540                1545                1550

aat atc aac aca tca gct gag ccc cat gta gcg ggt cca gat gca gta   5007
Asn Ile Asn Thr Ser Ala Glu Pro His Val Ala Gly Pro Asp Ala Val
               1555                1560                1565

gag agt ggt gat tat gca gta ata gat cag gaa aca atg ggt gct cag   5055
Glu Ser Gly Asp Tyr Ala Val Ile Asp Gln Glu Thr Met Gly Ala Gln
          1570                1575                1580

gat gca tgc tct ctg cca tct gga tcg gtt gga act cag tct gac cta   5103
Asp Ala Cys Ser Leu Pro Ser Gly Ser Val Gly Thr Gln Ser Asp Leu
       1585                1590                1595

gga gca aac att gag ggt caa aat gtc aca aca gtg gct caa ctt ccc   5151
Gly Ala Asn Ile Glu Gly Gln Asn Val Thr Thr Val Ala Gln Leu Pro
   1600                1605                1610

aca gat gga tca gat gca gtt gta acc ggt gga tct cct gta tca gat   5199
Thr Asp Gly Ser Asp Ala Val Val Thr Gly Gly Ser Pro Val Ser Asp
1615                1620                1625                1630

cag tgt gcc cag gat gca tct cct atg cca tta tct tcg cct gga aat   5247
Gln Cys Ala Gln Asp Ala Ser Pro Met Pro Leu Ser Ser Pro Gly Asn
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                1635                1640                1645

cac cct gat aca gca gtt aat atc gag ggt tta gat aac aca tca gta   5295
His Pro Asp Thr Ala Val Asn Ile Glu Gly Leu Asp Asn Thr Ser Val
          1650                1655                1660

gct gag cct cat ata agt gga tca gat gca tgt gaa atg gaa att tca   5343
Ala Glu Pro His Ile Ser Gly Ser Asp Ala Cys Glu Met Glu Ile Ser
      1665                1670                1675

gaa cct ggt ccc caa gta gag cgg tca acc ttt gca aat ctt ttc cat   5391
Glu Pro Gly Pro Gln Val Glu Arg Ser Thr Phe Ala Asn Leu Phe His
  1680                1685                1690

gaa ggt ggc gtg gag cat tca gca ggt gta aca gct ctt gtt cca tca   5439
Glu Gly Gly Val Glu His Ser Ala Gly Val Thr Ala Leu Val Pro Ser
1695                1700                1705                1710

ctt ctt aac aat ggt acg gaa cag att gcc gtt caa cct gtt cct caa   5487
Leu Leu Asn Asn Gly Thr Glu Gln Ile Ala Val Gln Pro Val Pro Gln
                1715                1720                1725

ata cct ttc cct gtg ttc aac gac ccg ttt ctg cat gaa ctg gag aag   5535
Ile Pro Phe Pro Val Phe Asn Asp Pro Phe Leu His Glu Leu Glu Lys
          1730                1735                1740

ttg cgg aga gaa tca gag aac tca aag aag act ttt gaa gaa aaa aaa   5583
Leu Arg Arg Glu Ser Glu Asn Ser Lys Lys Thr Phe Glu Glu Lys Lys
      1745                1750                1755

tca atc ttg aaa gct gaa ctc gag agg aag atg gct gaa gta caa gca   5631
Ser Ile Leu Lys Ala Glu Leu Glu Arg Lys Met Ala Glu Val Gln Ala
  1760                1765                1770

gag ttt cga aga aaa ttt cat gag gta gaa gcc gag cat aac acc aga   5679
Glu Phe Arg Arg Lys Phe His Glu Val Glu Ala Glu His Asn Thr Arg
1775                1780                1785                1790

acg aca aag ata gag aag gat aag aat ctt gtt ata atg aac aaa ctg   5727
Thr Thr Lys Ile Glu Lys Asp Lys Asn Leu Val Ile Met Asn Lys Leu
                1795                1800                1805

ttg gcg aat gcg ttc ttg tcc aaa tgt act gac aag aag gta tct ccc   5775
Leu Ala Asn Ala Phe Leu Ser Lys Cys Thr Asp Lys Lys Val Ser Pro
          1810                1815                1820

tca gga gct cca agg ggt aaa att cag cag cta gca cag aga gca gca   5823
Ser Gly Ala Pro Arg Gly Lys Ile Gln Gln Leu Ala Gln Arg Ala Ala
      1825                1830                1835

caa gtg agt gca ctg aga aat tac att gct cct cag cag ctt cag gca   5871
Gln Val Ser Ala Leu Arg Asn Tyr Ile Ala Pro Gln Gln Leu Gln Ala
  1840                1845                1850

tct tct ttt cct gct cct gct ctg gtt tcg gct cct ctg caa ctt cag   5919
Ser Ser Phe Pro Ala Pro Ala Leu Val Ser Ala Pro Leu Gln Leu Gln
1855                1860                1865                1870

caa tca tca ttt cct gct cct ggt ccg gct cct ctg cag cct cag gca   5967
Gln Ser Ser Phe Pro Ala Pro Gly Pro Ala Pro Leu Gln Pro Gln Ala
                1875                1880                1885

tct tcg ttt cct tct tca gtc tct cgt cca tca gcc ctt ctt ctg aat   6015
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Ser Ser Phe Pro Ser Ser Val Ser Arg Pro Ser Ala Leu Leu Leu Asn
          1890                1895                1900

ttt gcg gtc tgt cca atg cct cag ccc aga cag cct ctc ata tcc aac   6063
Phe Ala Val Cys Pro Met Pro Gln Pro Arg Gln Pro Leu Ile Ser Asn
       1905                1910                1915

ata gct cca act cca tca gtt act cct gca aca aat cca ggt ctg cgt   6111
Ile Ala Pro Thr Pro Ser Val Thr Pro Ala Thr Asn Pro Gly Leu Arg
   1920                1925                1930

tct cct gca cca cac cta aac tca tat aga cca tcc tct tca act ccc   6159
Ser Pro Ala Pro His Leu Asn Ser Tyr Arg Pro Ser Ser Ser Thr Pro
1935                1940                1945                1950

gtc gcc aca gct act cca acc tcg tca gtg cct cct caa gct ttg aca   6207
Val Ala Thr Ala Thr Pro Thr Ser Ser Val Pro Pro Gln Ala Leu Thr
               1955                1960                1965

tat tca gct gtg tca att cag cag cag caa gaa caa caa ccg caa cag   6255
Tyr Ser Ala Val Ser Ile Gln Gln Gln Gln Glu Gln Gln Pro Gln Gln
          1970                1975                1980

agc ttg agc agt gga ttg cag agc aac aat gaa gtg gtt tgt ctt tct   6303
Ser Leu Ser Ser Gly Leu Gln Ser Asn Asn Glu Val Val Cys Leu Ser
       1985                1990                1995

gac gac gag tgacctaaga ggagagatgg ttagggtctt agttattgat           6352
Asp Asp Glu
   2000

ttttagagag ttaataatag tatatatata tatgtataag taggttacct aatctctgtc 6412

gttaatctaa tttagtgagt caggaaccga ctcgttggct aaggtctctc cttttgaaac 6472

gcaacgttct actttcatgt atataaatac agtctgatca cacaacacaa attgatgatt 6532

gaaaatacta ctgatttaac ttaaaaaaaa aaaaaaaaa                         6571
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Met Lys Lys Asp Glu Lys Ile Gly Leu Thr Gly Arg Thr Ile Tyr Thr
1               5                  10                  15

Arg Ser Leu Ala Ala Ser Ile Pro Ala Ser Val Glu Gln Glu Thr Pro
            20                  25                  30

Gly Leu Arg Arg Ser Ser Arg Gly Thr Pro Ser Thr Lys Val Ile Thr
        35                  40                  45

Pro Ala Ser Ala Thr Arg Lys Ser Glu Arg Leu Ala Pro Ser Pro Ala
    50                  55                  60

Ser Val Ser Lys Lys Ser Gly Gly Ile Val Lys Asn Ser Thr Pro Ser
65                  70                  75                  80

Ser Leu Arg Arg Ser Asn Arg Gly Lys Thr Glu Val Ser Leu Gln Ser
                85                  90                  95
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Ser Lys Gly Ser Asp Asn Ser Ile Arg Lys Gly Asp Thr Ser Pro Asp
            100                 105                 110

Ile Glu Gln Arg Lys Asp Ser Val Glu Glu Ser Thr Asp Lys Ile Lys
        115                 120                 125

Pro Ile Met Ser Ala Arg Ser Tyr Arg Ala Leu Phe Arg Gly Lys Leu
    130                 135                 140

Lys Glu Ser Glu Ala Leu Val Asp Ala Ser Pro Asn Glu Glu Glu Leu
145                 150                 155                 160

Val Val Val Gly Cys Ser Arg Arg Ile Pro Ala Gly Asn Asp Asp Val
                165                 170                 175

Gln Gly Lys Thr Asp Cys Pro Pro Pro Ala Asp Ala Gly Ser Lys Arg
            180                 185                 190

Leu Pro Val Asp Glu Thr Ser Leu Asp Lys Gly Thr Asp Phe Pro Leu
        195                 200                 205

Lys Ser Val Thr Glu Thr Glu Lys Ile Val Leu Asp Ala Ser Pro Ile
    210                 215                 220

Val Glu Thr Gly Asp Asp Ser Val Ile Gly Ser Pro Ser Glu Asn Leu
225                 230                 235                 240

Glu Thr Gln Lys Leu Gln Asp Gly Lys Thr Asp Cys Ser Pro Pro Ala
                245                 250                 255

Asn Ala Glu Ser Lys Thr Leu Pro Val Gly Glu Thr Ser Leu Glu Lys
            260                 265                 270

Glu Tyr Pro Gln Lys Phe Gln Asp Asp Asn Thr Asp Cys Leu Pro Pro
        275                 280                 285

Ala Asn Ala Glu Ser Lys Arg Leu Pro Val Gly Glu Thr Ser Leu Glu
    290                 295                 300

Lys Asp Thr Asp Phe Pro Leu Lys Ser Thr Thr Glu Thr Gly Lys Met
305                 310                 315                 320

Val Leu Tyr Ala Ser Pro Ile Val Glu Thr Arg Asp Asp Ser Val Ile
                325                 330                 335

Cys Ser Pro Ser Thr Asn Leu Glu Thr Gln Lys Leu Leu Val Ser Lys
            340                 345                 350

Thr Gly Leu Glu Thr Asp Ile Val Leu Pro Leu Lys Arg Lys Arg Asp
        355                 360                 365

Thr Ala Glu Ile Glu Leu Asp Ala Cys Ala Thr Val Ala Asn Gly Asp
    370                 375                 380

Asp His Val Met Ser Ser Asp Gly Val Ile Pro Ser Pro Ser Gly Cys
385                 390                 395                 400

Lys Asn Asp Asn Arg Pro Glu Met Cys Asn Thr Cys Lys Lys Arg Gln
                405                 410                 415

Lys Val Asn Gly Asp Cys Gln Asn Arg Ser Val Cys Ser Cys Ile Val
            420                 425                 430
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Gln Pro Val Glu Glu Ser Asp Asn Val Thr Gln Asp Met Lys Glu Thr
        435                 440                 445

Gly Pro Val Thr Ser Arg Glu Tyr Glu Glu Asn Gly Gln Ile Gln His
    450                 455                 460

Gly Lys Ser Ser Asp Pro Lys Phe Tyr Ser Ser Val Tyr Pro Glu Tyr
465                 470                 475                 480

Trp Val Pro Val Gln Leu Ser Asp Val Gln Leu Glu Gln Tyr Cys Gln
                485                 490                 495

Thr Leu Phe Ser Lys Ser Leu Ser Leu Ser Ser Leu Ser Lys Ile Asp
            500                 505                 510

Leu Gly Ala Leu Glu Glu Thr Leu Asn Ser Val Arg Lys Thr Cys Asp
        515                 520                 525

His Pro Tyr Val Met Asp Ala Ser Leu Lys Gln Leu Leu Thr Lys Asn
    530                 535                 540

Leu Glu Leu His Glu Ile Leu Asp Val Glu Ile Lys Ala Ser Gly Lys
545                 550                 555                 560

Leu His Leu Leu Asp Lys Met Leu Thr His Ile Lys Lys Asn Gly Leu
                565                 570                 575

Lys Ala Val Val Phe Tyr Gln Ala Thr Gln Thr Pro Glu Gly Leu Leu
            580                 585                 590

Leu Gly Asn Ile Leu Glu Asp Phe Val Gly Gln Arg Phe Gly Pro Lys
        595                 600                 605

Ser Tyr Glu His Gly Ile Tyr Ser Ser Lys Lys Asn Ser Ala Ile Asn
    610                 615                 620

Asn Phe Asn Lys Glu Ser Gln Cys Cys Val Leu Leu Leu Glu Thr Arg
625                 630                 635                 640

Ala Cys Ser Gln Thr Ile Lys Leu Leu Arg Ala Asp Ala Phe Ile Leu
                645                 650                 655

Phe Gly Ser Ser Leu Asn Pro Ser His Asp Val Lys His Val Glu Lys
            660                 665                 670

Ile Lys Ile Glu Ser Cys Ser Glu Arg Thr Lys Ile Phe Arg Leu Tyr
        675                 680                 685

Ser Val Cys Thr Val Glu Glu Lys Ala Leu Ile Leu Ala Arg Gln Asn
    690                 695                 700

Met Arg Gln Asn Lys Ala Val Glu Asn Leu Asn Arg Ser Leu Thr His
705                 710                 715                 720

Ala Leu Leu Met Trp Gly Ala Ser Tyr Leu Phe Asp Lys Leu Asp His
                725                 730                 735

Phe His Ser Ser Glu Thr Pro Asp Ser Gly Val Ser Phe Glu Gln Ser
            740                 745                 750

Ile Met Asp Gly Val Ile His Glu Phe Ser Ser Ile Leu Ser Ser Lys
        755                 760                 765
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Gly Gly Glu Glu Asn Glu Val Lys Leu Cys Leu Leu Glu Ala Lys
    770                 775                 780

His Ala Gln Gly Thr Tyr Ser Ser Asp Ser Thr Leu Phe Gly Glu Asp
785                 790                 795                 800

His Ile Lys Leu Ser Asp Glu Glu Ser Pro Asn Ile Phe Trp Ser Lys
                805                 810                 815

Leu Leu Gly Gly Lys Asn Pro Met Trp Lys Tyr Pro Ser Asp Thr Pro
            820                 825                 830

Gln Arg Asn Arg Lys Arg Val Gln Tyr Phe Glu Gly Ser Glu Ala Ser
        835                 840                 845

Pro Lys Thr Gly Asp Gly Gly Asn Ala Lys Lys Arg Lys Lys Ala Ser
    850                 855                 860

Asp Asp Val Thr Asp Pro Arg Val Thr Asp Pro Pro Val Asp Asp Asp
865                 870                 875                 880

Glu Arg Lys Ala Ser Gly Lys Asp His Met Gly Ala Leu Glu Ser Pro
                885                 890                 895

Lys Val Ile Thr Leu Gln Ser Ser Cys Lys Ser Ser Gly Thr Asp Gly
            900                 905                 910

Thr Leu Asp Gly Asn Asp Ala Phe Gly Leu Tyr Ser Met Gly Ser His
        915                 920                 925

Ile Ser Gly Ile Pro Glu Asp Met Leu Ala Ser Gln Asp Trp Gly Lys
    930                 935                 940

Ile Pro Asp Glu Ser Gln Arg Arg Leu His Thr Val Leu Lys Pro Lys
945                 950                 955                 960

Met Ala Lys Leu Cys Gln Val Leu His Leu Ser Asp Ala Cys Thr Ser
                965                 970                 975

Met Val Gly Asn Phe Leu Glu Tyr Val Ile Glu Asn His Arg Ile Tyr
            980                 985                 990

Glu Glu Pro Ala Thr Thr Phe Gln  Ala Phe Gln Ile Ala  Leu Ser Trp
        995                 1000                1005

Ile Ala  Ala Leu Leu Val Lys  Gln Ile Leu Ser His  Lys Glu Ser
    1010                1015                1020

Leu Val  Arg Ala Asn Ser Glu  Leu Ala Phe Lys Cys  Ser Arg Val
    1025                1030                1035

Glu Val  Asp Tyr Ile Tyr Ser  Ile Leu Ser Cys Met  Lys Ser Leu
    1040                1045                1050

Phe Leu  Glu His Thr Gln Gly  Leu Gln Phe Asp Cys  Phe Gly Thr
    1055                1060                1065

Asn Ser  Lys Gln Ser Val Val  Ser Thr Lys Leu Val  Asn Glu Ser
    1070                1075                1080

Leu Ser  Gly Ala Thr Val Arg  Asp Glu Lys Ile Asn  Thr Lys Ser
    1085                1090                1095
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Met Arg Asn Ser Ser Glu Asp Glu Glu Cys Met Thr Glu Lys Arg
1100 1105 1110

Cys Ser His Tyr Ser Thr Ala Thr Arg Asp Ile Glu Lys Thr Ile
1115 1120 1125

Ser Gly Ile Lys Lys Lys Tyr Lys Lys Gln Val Gln Lys Leu Val
1130 1135 1140

Gln Glu His Glu Glu Lys Lys Met Glu Leu Leu Asn Met Tyr Ala
1145 1150 1155

Asp Lys Lys Gln Lys Leu Glu Thr Ser Lys Ser Val Glu Ala Ala
1160 1165 1170

Val Ile Arg Ile Thr Cys Ser Arg Thr Ser Thr Gln Val Gly Asp
1175 1180 1185

Leu Lys Leu Leu Asp His Asn Tyr Glu Arg Lys Phe Asp Glu Ile
1190 1195 1200

Lys Ser Glu Lys Asn Glu Cys Leu Lys Ser Leu Glu Gln Met His
1205 1210 1215

Glu Val Ala Lys Lys Lys Leu Ala Glu Asp Glu Ala Cys Trp Ile
1220 1225 1230

Asn Arg Ile Lys Ser Trp Ala Ala Lys Leu Lys Val Cys Val Pro
1235 1240 1245

Ile Gln Ser Gly Asn Asn Lys His Phe Ser Gly Ser Ser Asn Ile
1250 1255 1260

Ser Gln Asn Ala Pro Asp Val Gln Ile Cys Asn Asn Ala Asn Val
1265 1270 1275

Glu Ala Thr Tyr Ala Asp Thr Asn Cys Met Ala Ser Lys Val Asn
1280 1285 1290

Gln Val Pro Glu Ala Glu Asn Thr Leu Gly Thr Met Ser Gly Gly
1295 1300 1305

Ser Thr Gln Gln Val His Glu Met Val Asp Val Arg Asn Asp Glu
1310 1315 1320

Thr Met Asp Val Ser Ala Leu Ser Arg Glu Gln Leu Thr Lys Ser
1325 1330 1335

Gln Ser Asn Glu His Ala Ser Ile Thr Val Pro Glu Ile Leu Ile
1340 1345 1350

Pro Ala Asp Cys Gln Glu Glu Phe Ala Ala Leu Asn Val His Leu
1355 1360 1365

Ser Glu Asp Gln Asn Cys Asp Arg Ile Thr Ser Ala Ala Ser Asp
1370 1375 1380

Glu Asp Val Ser Ser Arg Val Pro Glu Val Ser Gln Ser Leu Glu
1385 1390 1395

Asn Leu Ser Ala Ser Pro Glu Phe Ser Leu Asn Arg Glu Glu Ala
1400 1405 1410

Leu Val Thr Thr Glu Asn Arg Arg Thr Ser His Val Gly Phe Asp
1415 1420 1425

Thr Asp Asn Ile Leu Asp Gln Gln Asn Arg Glu Asp Cys Ser Leu
1430 1435 1440

Asp Gln Glu Ile Pro Asp Glu Leu Ala Met Pro Val Gln His Leu
1445 1450 1455

Ala Ser Val Val Glu Thr Arg Gly Ala Ala Glu Ser Asp Gln Tyr
1460 1465 1470

Gly Gln Asp Ile Cys Pro Met Pro Ser Ser Leu Ala Gly Lys Gln
1475 1480 1485

Pro Asp Pro Ala Ala Asn Thr Glu Ser Glu Asn Leu Glu Glu Ala
1490 1495 1500

Ile Glu Pro Gln Ser Ala Gly Ser Glu Thr Val Glu Thr Thr Asp
1505 1510 1515

Phe Ala Ala Ser His Gln Gly Asp Gln Val Thr Cys Pro Leu Leu
1520 1525 1530

Ser Ser Pro Thr Gly Asn Gln Pro Ala Pro Glu Ala Asn Ile Glu
1535 1540 1545

Gly Gln Asn Ile Asn Thr Ser Ala Glu Pro His Val Ala Gly Pro
1550 1555 1560

Asp Ala Val Glu Ser Gly Asp Tyr Ala Val Ile Asp Gln Glu Thr
1565 1570 1575

Met Gly Ala Gln Asp Ala Cys Ser Leu Pro Ser Gly Ser Val Gly
1580 1585 1590

Thr Gln Ser Asp Leu Gly Ala Asn Ile Glu Gly Gln Asn Val Thr
1595 1600 1605

Thr Val Ala Gln Leu Pro Thr Asp Gly Ser Asp Ala Val Val Thr
1610 1615 1620

Gly Gly Ser Pro Val Ser Asp Gln Cys Ala Gln Asp Ala Ser Pro
1625 1630 1635

Met Pro Leu Ser Ser Pro Gly Asn His Pro Asp Thr Ala Val Asn
1640 1645 1650

Ile Glu Gly Leu Asp Asn Thr Ser Val Ala Glu Pro His Ile Ser
1655 1660 1665

Gly Ser Asp Ala Cys Glu Met Glu Ile Ser Glu Pro Gly Pro Gln
1670 1675 1680

Val Glu Arg Ser Thr Phe Ala Asn Leu Phe His Glu Gly Gly Val
1685 1690 1695

Glu His Ser Ala Gly Val Thr Ala Leu Val Pro Ser Leu Leu Asn
1700 1705 1710

Asn Gly Thr Glu Gln Ile Ala Val Gln Pro Val Pro Gln Ile Pro
1715 1720 1725

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Phe Pro  Val Phe Asn Asp Pro  Phe Leu His Glu Leu  Glu Lys Leu
    1730                 1735                 1740

Arg Arg  Glu Ser Glu Asn Ser  Lys Lys Thr Phe Glu  Glu Lys Lys
    1745                 1750                 1755

Ser Ile  Leu Lys Ala Glu Leu  Glu Arg Lys Met Ala  Glu Val Gln
    1760                 1765                 1770

Ala Glu  Phe Arg Arg Lys Phe  His Glu Val Glu Ala  Glu His Asn
    1775                 1780                 1785

Thr Arg  Thr Thr Lys Ile Glu  Lys Asp Lys Asn Leu  Val Ile Met
    1790                 1795                 1800

Asn Lys  Leu Leu Ala Asn Ala  Phe Leu Ser Lys Cys  Thr Asp Lys
    1805                 1810                 1815

Lys Val  Ser Pro Ser Gly Ala  Pro Arg Gly Lys Ile  Gln Gln Leu
    1820                 1825                 1830

Ala Gln  Arg Ala Ala Gln Val  Ser Ala Leu Arg Asn  Tyr Ile Ala
    1835                 1840                 1845

Pro Gln  Gln Leu Gln Ala Ser  Ser Phe Pro Ala Pro  Ala Leu Val
    1850                 1855                 1860

Ser Ala  Pro Leu Gln Leu Gln  Gln Ser Ser Phe Pro  Ala Pro Gly
    1865                 1870                 1875

Pro Ala  Pro Leu Gln Pro Gln  Ala Ser Ser Phe Pro  Ser Ser Val
    1880                 1885                 1890

Ser Arg  Pro Ser Ala Leu Leu  Leu Asn Phe Ala Val  Cys Pro Met
    1895                 1900                 1905

Pro Gln  Pro Arg Gln Pro Leu  Ile Ser Asn Ile Ala  Pro Thr Pro
    1910                 1915                 1920

Ser Val  Thr Pro Ala Thr Asn  Pro Gly Leu Arg Ser  Pro Ala Pro
    1925                 1930                 1935

His Leu  Asn Ser Tyr Arg Pro  Ser Ser Ser Thr Pro  Val Ala Thr
    1940                 1945                 1950

Ala Thr  Pro Thr Ser Ser Val  Pro Pro Gln Ala Leu  Thr Tyr Ser
    1955                 1960                 1965

Ala Val  Ser Ile Gln Gln Gln  Gln Glu Gln Gln Pro  Gln Gln Ser
    1970                 1975                 1980

Leu Ser  Ser Gly Leu Gln Ser  Asn Asn Glu Val Val  Cys Leu Ser
    1985                 1990                 1995

Asp Asp  Glu
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<211> 21
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Oligonucleotide

<400> 4
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<210> 5
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Oligonucleotide

<400> 5
gatgggaatt ggctgagtgg c 21

<210> 6
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Synthetic Oligonucleotide

<400> 6
cagttccaaa cgtaaaacgg c 21

<210> 7
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<222> 1
<223> Description of Artificial Sequence:Synthetic Oligonucleotide
n= a, t, g, or c

<400> 7
ntcgastwts gwgtt 15

<210> 8
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<222> 1
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n= a, t, g, or c

<400> 8

ngtcgaswga nawgaa 16

<210> 9
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<222> 5..13
<223> Description of Artificial Sequence:Synthetic Oligonucleotide
n= a, t, g, or c

<400> 9
wgtgnagwan canaga 16

<210> 10
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<222> 6..13
<223> Description of Artificial Sequence:Synthetic Oligonucleotide
n= a, t, g, or c

<400> 10
wggwancwga wangca 16

<210> 11
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<222> 11..13
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n= a, t, g, or c

<400> 11
wcgwwgawca ngncga 16

<210> 12
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<222> 4..13
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n= a, t, g, or c

<400> 12
wgcnagtnag wanaag 16

<210> 13
<211> 16
<212> DNA
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<220>
<222> 6..13
<223> Description of Artificial Sequence:Synthetic
Oligonucleotide
n= a, t, g, or c

<400> 13
awgcangncw ganata 16

<210> 14
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..24
<223> Description of Artificial Sequence:Synthetic
Oligonucleotide

<400> 14
ctgtacatac tgagtacaat cgga 24

<210> 15
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..25
<223> Description of Artificial Sequence:Synthetic
Oligonucleotide

<400> 15
gcttcaattc ctgcctcagt tgaac 25

<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..24
<223> Description of Artificial Sequence:Synthetic
Oligonucleotide

<400> 16
ctctacgtgc ttaacatcat gcga 24

<210> 17
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<222> 1..25
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Oligonucleotide

<400> 17
ccagcttctg ctactagaaa gtcag 25

<210> 18
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..25
<223> Description of Artificial Sequence:synthetic
Oligonucleotide

<400> 18
ctggagttgc atgaaatcct ggatg 25

<210> 19
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<212> DNA
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<220>
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Oligonucleotide

<400> 19
gctctttgta agctgttcac gagac 25

<210> 20
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<212> DNA
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<220>
<222> 1..24
<223> Description of Artificial Sequence:Synthetic
Oligonucleotide

<400> 20
tcgcatgatg ttaagcacgt agag 24

<210> 21
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..25
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Oligonucleotide

<400> 21
gagtactggt ccgtgaacag gtaat 25

<210> 22
<211> 25
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<222> 1..25
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<400> 22
atgcttgcac aagcatggtc ggaaa 25

<210> 23
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..25
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<400> 23
tgcaacatcg tgcatttgct ccaga 25

<210> 24
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..25
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Oligonucleotide

<400> 24
cacaagcatg agtttttcct tccgg 25

<210> 25
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<222> 1..25
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Oligonucleotide

<400> 25
ctgactttct agtagcagaa gctgg 25

<210> 26
<211> 519
<212> DNA
<213> Brassica oleracea

<220>
<222> 10..11
<223> seq1-23
n= a, t, g, or c

<400> 26
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tccactccca tggaagtgtt ccagcttatc aaataaatat gatgcccccc acatgagcaa 120
tgcatgtgtg agaggacggt ttaggttctc tagaggctta ttttgcctag caagaatcag 180
ggtttttct tcaactgtaa acactgagta caaccggaaa atcttagttc tttcagaaca 240
cgactcaacc tttatcttct ctaagagctt aacgtcatgc gatggattca ggctgcttcc 300
aaaaagtata aaagactcag cgcgtaagag tttaatgctt tgactacagg cacgtatttc 360
cagcagcaga ataaaacact cactctcctt gttgaaattg tttatagcgt tcttcttcga 420
gaggcagacc ccatgctcat aggaattttg accaaatctt tgcatcagaa aatcttcgag 480
aatattacca agcagaagcc cctcagggct atgtattgc 519

<210> 27
<211> 419
<212> DNA
<213> Brassica oleracea

<220>
<223> seq1-27

<400> 27
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tcctgtggaa gtaactaagg atatagagaa gacagtggtt gattcatccc ccatggttga 120
aactgaggat ggcagtgtta taggttcacc atccgagaat ccagaaccac aaaagcttcg 180
tgacagtgaa actagcttgg aaaccgatat agacttggct ctgaaaagaa aaagagacac 240
tgcagaaatt gtgatggatg catgtacaaa tgcagatgac cgcattatga gtactgatgg 300
ggttattcct tttccacccg tgtgcacaaa tattaatcaa cccgaaaggt gtggcacatg 360
tcaaaaacgg caaaagtaag aatttccgac tgttgtctgt cgttttgaaa ccatttgcc 419

<210> 28
<211> 467
<212> DNA
<213> Brassica oleracea

<220>
<223> seq1-43

<400> 28
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cttttggaag ccaagcatgc tcagggaagt tacagcactg atgctactct atttggtgaa 120
gaacatgtca agttatcaga tgaaagtcca aatatgtttt ggtcaaagct gttgagtgga 180
aagaacccta tgtggaaata ctgttcggat actcctcaaa ggagtcgaaa aagagtacgg 240
catcttcagg gctatgagga gactaccaaa gttggcaatg gcggaaactt aaagaagaaa 300
aagaaggctt cagatgatgt cacagtagat aacgctgaga gaaaagcctc tggaaaggat 360
cacatgggta aaacagttca cttcctgctc ctttacctct agtgttcatt gaatgttcca 420
tttactttgc ttactatctt tccttcaggg catttggagt caccaaa 467

<210> 29
<211> 490
<212> DNA
<213> Brassica oleracea

<220>
<223> seq1-47

<400> 29

gaattcagct tttaaaactg atctctgctc acagataatt taagagtcag tgaaaattga 60
gataaaacga accaaaactg gaggtaacag atactctgag aacaactaac cttttcttca 120
taagtcttct ttgtgttctc tgattctctc cgcagcttct ccagttcatg ctgaaatggg 180
tcactgaaca cagggaaagg tacttgagga acaggtggag tggcattctg tcccgtagca 240
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tcgacaacgt ctgcgtaaaa ggtattacca gattgtcagt ttctctggca aacacatacg 360
ttatacttaa atgcaaaaga gcagttactg acttgcaaag gttggttgtt ctacttgagc 420
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tgttgtgttg 490

<210> 30
<211> 515
<212> DNA
<213> Brassica oleracea

<220>
<223> 2-33

<400> 30
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gggcgcacac aaggtttcca agaaaagggt gaagaatgca tggctgagaa aagaggtagc 120
cattatagct cagtaaccaa ggatgttgaa aagactatta gcgacatcaa aaagaaatgc 180
agtaagagcc tgcataagct tgtacaaacc ctcgaggaag aaaagatgga cctgatgaat 240
aggaatgctg tcaagaagca ggaacttcag aattgtaaaa aggtggaagc atcatttatt 300
cgtgtcacct attcaggtat aaatactcag agcttacatg atgctctcca acggctggaa 360
tgtacttttg aaagaaagtt tgatgatctc aaaggagagt tggatgaatg ccttgaaagt 420
ttagagcaaa taaacgaggc tggaaagaag aagttggctg aagatgaagc ctgttggatt 480
agtcggatag agaaatgggc acgagctgaa ttaag 515

<210> 31
<211> 574
<212> DNA
<213> Brassica oleracea

<220>
<223> seq2-37

<400> 31
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cagaccacat cattgctcct ctgcaatcca ctccccaagt tctgtggttg ttcttgctgc 120
tgaataaacg catttgaata tggtaaaggg ttggagatga gaggttgtct tggttgaggc 180
attgtgcagt acggagccga agcagtatga ttcctcagtg cgcttacttg tgttgctctc 240
tgtgctagct gctggattct aactggagaa agaaaaaaag aaaaaaaagg tgttattatg 300
acttcataac cttatatctt taaaaaacaa ttatgcttct attattcgaa cacttgccca 360
ttggagttgc tgctgaggaa tgagaggaga ttctgctcgt acatttagac aagaacgcac 420
tcgacaacag cttgttcttt ataacaagat tcttcctcgt ctgtaacttc gtctttctgg 480
ctgcatgtac agcttgtacc tcatgaaact ttctctgata ctcttcttgt aattcagcta 540
tcttcttctc gaatttagct ttcaagactg cttt 574

<210> 32
<211> 466
<212> DNA
<213> Brassica oleracea

<220>
<223> seq2-53

<400> 32
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tctccgtgtt tcctccagca ttgctcagcc agttcaagaa cctgatcact tggcacaggt 120

tggtttcttc ttgctttact ttggacacct gtttaatatt ggcctgtcaa atttacttat 180
ccttttactt ctaaactgca aattctggtc tgcattgcat tgtgatatga aggtatctgg 240
acccgcttca agcagagact atggggagga caggcagaat atgcaacaag ataaatcaca 300
tgaccgaaag ttgtcatcga tgtatccaga gtattgggtt ccagtgcagc tatcagatgt 360
acagatagag caatactgtc ggactctctt ctccaaatct tcatctcttt cttcgctgtc 420
gaggactgat cctgttcgag ctcttgaaca aactctcagt tctgta 466

<210> 33
<211> 417
<212> DNA
<213> Brassica oleracea

<220>
<223> seq2-57

<400> 33
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cttttgctta acgaaagaga ctgcaatcca aatctggaag tgcattatta agaacgtatt 120
cagcaatatt cataaattat gcaacaatca aaggccttac gttgtggcct acaaagcatg 180
gattttgtta gatattagta gctagtctaa ttcaagcaat taatggaagt ttctatccta 240
tgactggaaa gttaaacatt cccacaaaag cagtgatgcc acagatgatg aagaagaaaa 300
atgcatatac tatggaagtg aatgctatca taccacagct atctggaagg cctgcaatgt 360
tgtagctggc tctttgcaga cacggtggtt gtcaataata tattcaagaa ctttttc 417

<210> 34
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<222> 1..8
<223> ATP/GTP-binding motif A concensus sequence

<220>
<222> 1
<223> Xaa= Ala or Gly

<220>
<222> 2..5
<223> Xaa= any amino acid

<220>
<222> 8
<223> Xaa= Ser or Thr

<400> 34
Xaa Xaa Xaa Xaa Xaa Gly Lys Xaa
1 5